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1. Gradient descent is an algorithm for finding values of parameters w and b that minimize the cost function J .

repeat until convergence {

$$w = w - \alpha \frac{\partial}{\partial w} J(w, b)$$
$$b = b - \alpha \frac{\partial}{\partial b} J(w, b)$$

When $\frac{\partial J(w, b)}{\partial w}$ is a negative number (less than zero), what happens to w after one update step?

- ☐ w decreases
- ☒ w increases.
- ☐ w stays the same
- ☐ It is not possible to tell if w will increase or decrease.

✓ **Correct**

The learning rate is always a positive number, so if you take w minus a negative number, you end up with a new value for w that is larger (more positive).

1 / 1 point

2. For linear regression, what is the update step for parameter b ?

- ☒ $b = b - \alpha \frac{1}{m} \sum_{i=1}^m (f_{w, b}(x^{(i)}) - y^{(i)})$
- ☐ $b = b - \alpha \frac{1}{m} \sum_{i=1}^m (f_{w, b}(x^{(i)}) - y^{(i)}) x^{(i)}$

✓ **Correct**

The update step is $b = b - \alpha \frac{\partial J(w, b)}{\partial b}$ where $\frac{\partial J(w, b)}{\partial b}$ can be computed with this expression:

$$\sum_{i=1}^m (f_{w, b}(x^{(i)}) - y^{(i)})$$